The Lactating Mothers' Drug Use and Associated Factors during the First Month Postpartum

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Background: *The data on the prevalence of a lactating mothers' drug use is minimal.*
Objective: *To find the prevalence of the lactating mothers' drug use and the associated factors.*
Material and Method: *The subjects were postpartum women who delivered at HRH Princess Maha Chakri Sririndhorn Medical Center in Nakhon Nayok Province during the period from September, 2016 to January, 2017. Two hundred and twenty subjects were interviewed about their drug use including the type, duration of use, source of the drugs, breastfeeding advice received, breastfeeding data and demographic data from home visits at the first month postpartum. The prevalence of the lactating mothers' drug use and the associated factors were analyzed by percentage, t-test, Chi-square, prevalence rate ratio and a 95% confidence interval.*
Results: *The prevalence of the lactating mothers' drug use was 31.4%. The most used drug during breastfeeding was 'herbal health tonic for women' (79.7%) at the first month postpartum. Most of the mothers bought drugs from pharmacies and were not advised about the drug's use during breastfeeding. The associated factors of drug use were an educational level of lower than a high school education (prevalence rate ratio 2.26, 95% CI 0.98 to 5.19) and delivery by vaginal delivery (prevalence rate ratio 1.91, 95% CI 1.27 to 2.88).*
Conclusion: *Mothers often used 'herbal health tonic for women' during breastfeeding. It is likely to have negative effect on breastfeeding and the newborns' health. Therefore, adequate evidence-based information about the drug's use should be supported by health professionals and pharmacists. This includes establishing a social campaign.*

Keywords: *Lactating mother, Drug use, Breastfeeding*

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Breastfeeding is the most appropriate nutrition for the newborn. The World Health Organization recommends exclusive breastfeeding during the first six months of the infants life[1]. During the early postpartum period, the lactating mothers' drug use may have an effect on the continuation of breastfeeding. When mothers are sick, they will purchase drugs from pharmacies or go to a clinic or hospital. If the mothers get the drugs, the types of the drugs and the advice about drug information and safety can influence breastfeeding[2]. Some mothers might make the decision to stop breastfeeding temporarily or permanently.

The prevalence of lactating mothers' drug use varies dependent on the social and community characteristics and the time frame for collection of the data. One previous study has reported that the prevalence is as high as 65.9%[3]. It has been reported that 17% of lactating mothers who have used drugs purchased them from pharmacies[4]. In Thailand, traditional or folk drugs and medicinal herbal alcohol is still used in the belief that these drugs help uterine contractions, push lochia rubra and change it to lochia alba, is maintained without any evidence-based support. We thought that the prevalence of traditional drug use is likely high. However, the problem size has not been evaluated and the data of lactating mothers' drug use is minimal. Therefore, we are interested in studying the prevalence of lactating mothers' drug use, types of drugs and advice about breastfeeding given to them during the first month postpartum and the associated factors.

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Material and Method

Design

The present study is a descriptive study. Singleton, postpartum mothers who delivered term

infants without postpartum complications and intended to have at least 6 months of breastfeeding were recruited for this study. Demographic data included age, parity, occupation, education and factors (route of delivery and body mass index: BMI) reported to have effects on the exclusive breastfeeding rates were recorded[5-14]. At the postpartum ward, mothers are taught and advised about proper breastfeeding. Following discharge, home visit follow-ups were scheduled at the end of first month by two experienced nurses (the nurses who have more than one year experience in the breastfeeding clinic were trained in a three-hour course about how to conduct a breastfeeding interview). The nurses interview mothers about breastfeeding and drug use during breastfeeding. The subject matter includes, types of drugs, source of drug and the advice of drug use during breastfeeding. The mothers' drug use data were collected and comparisons were analyzed between two groups, use of drugs and non-use of drugs.

Setting

The present study was done in the Nakhon Nayok Province, a rural area in central Thailand. Data were collected from the period from September 2016 to January 2017 at the HRH Princess Maha Chakri Sirindhorn Medical Center which was a 'Baby Friendly' hospital. A routine practice in the postpartum ward is breastfeeding education that is taught on the first day postpartum. The one-hour course in breastfeeding includes instruction on proper latching. One nurse teaches a group of 3 to 5 mothers. Mothers are encouraged to stimulate to feed their infants 8 to 12 times per day. At the second day postpartum, the mothers and infants are discharged if they have shown no complications. Prior to discharge, the mothers' telephone number is confirmed and a breastfeeding-recording notebook is given to the mother with an explanation of the "breastfeeding type" definitions, details on mothers' drug use, postpartum symptoms and complications which may require further clinical counseling.

Inclusion criteria

Singleton, postpartum women who have delivered without complications (*i.e.* preeclampsia, antepartum hemorrhage and preterm labor) and who intended to breastfeed for at least six months were recruited at postpartum ward in the hospital. Infants had birth weights greater than 2,500 grams without early neonatal complications. Mothers had no contraindications to breastfeeding.

Exclusion criteria

Mothers whose infants were diagnosed with galactosemia were excluded from this study.

Definitions

Drug use during breastfeeding means that an oral, injectable or any other form of drug that is taken during the lactating period. This includes modern drugs, traditional or folk drugs and medicinal herbal alcohol. Postpartum home medications, vitamins and contraceptive drugs are an exception to this study. The data were collected from notebook in which the mothers recorded drug use and breastfeeding type and mother's interview during home visit.

Exclusive breastfeeding is defined as no other food or drink, including water, other than breast milk and expressed milk. The infant is able to receive drops and syrups of vitamins, minerals, medicines and other oral rehydration salts (ORS)[15].

Predominant breastfeeding, by definition, is that the infant's predominant source of nourishment has been breast milk (number of breastfeeding frequencies were more than half of all feedings per day). However, the infant may also have received liquids (water and water-based drinks, fruit juice) ritual fluids and ORS, drops or syrups (vitamins, minerals and medicines).[15]

Mothers were taught to record all drugs used, breast feedings and any fluids or foods given to their infant in a breastfeeding notebook that was given to the mother prior to discharge. Drug use and breastfeeding results were collected from the mother consistent with the established definitions.

Sample size

We used the prevalence of 65.9% for sample size calculation and number of pregnant women' population in Ongkharak, Nakhon Nayok was 259. The calculated sample size were 155 cases.

Ethical considerations

This study was approved by The Ethics Committee of Faculty of Medicine, Srinakharinwirot University (SWUEC/E-201/2559).

Statistical analysis

Demographic data were reported in means, numbers and percentages. We used the t-test to

compare the mean of maternal ages, income and body mass index between; the use of drugs and did not-use drugs groups. The data of parity, occupation, education, route of delivery and the mothers' drug use were analyzed by Chi-square, prevalence rate ratio and a 95% confidence interval. A *p*-value of less than 0.05 is considered statistically significant. Statistical analysis was performed using SPSS version 19.0 IBM Singapore Pte., Ltd (Registration No. 1975-01566-C).

Results

The number of postpartum women that had enrolled in our research project totaled 220. The details of the demographic, breastfeeding and lactating mothers' drug use data are shown in Table 1 and 2.

When the comparative groups were analyzed, the results have shown that there were statistically significant differences in level of education and the route of delivery between the use of drugs and did not-use drugs groups. The prevalence rate ratio of drug use based on educational level (lower than high school) and women with a vaginal delivery were 2.26 (95% CI 0.98 to 5.19) and 1.91 (95% CI 1.27 to 2.88), respectively. Other factors: age, parity, occupation and income, had no statistically significant differences between either groups. The details of the comparisons of the mothers' factors between the use of drugs and did not-use drugs groups are shown in Table 3 and 4.

Table 1. Demographic data of lactating mothers (n = 220)

Mothers' data	
Mothers'age (mean ± SD, years)	25.8±6.5
Occupation n (%)	
Self-employed or housewife	144 (65.5)
Employee	76 (34.5)
Income (mean ± SD, baht)	15,459.1±8,209.8
Education n (%)	
<High school	187 (85.0)
>Bachelor degree	33 (15.0)
Parity n (%)	
Primipara	77 (35.0)
Multipara	143 (65.0)
Route of delivery n (%)	
Vaginal delivery	102 (46.4)
Cesarean section	118 (53.6)
BMI (mean ± SD, kg/m^2)	22.5±4.7

Table 2. Data of breastfeeding and lactating mothers'drug use (n = 220)

Data of lactating mothers'drug use	
Breastfeeding n (%)	
Exclusive breastfeeding	91 (41.4)
Predominant breastfeeding	129 (58.6)
Drug use n (%)	
Used	69 (31.4)
Not used	151 (68.6)
Types of drugs n (%)	
Herbal health tonic for woman	55 (79.7)
Drug for common cold	10 (14.5)
Antibiotics	2 (2.9)
Medicinal herbal alcohol	2 (2.9)
Source of drug n (%)	
Pharmacy	55 (79.7)
Clinic	8 (11.6)
Hospital	6 (8.7)
Drug advice n (%)	
No advice	43 (62.3)
Advice for stopping breastfeeding	4 (5.8)
Advice for continuing breastfeeding	22 (31.9)
Mothers'practice n (%)	
Stop breastfeeding temporary	2 (2.9)
Stop breastfeeding permanently	8 (11.6)
Continue breastfeeding	59 (85.5)

Discussion

The rate of lactating mothers' drug use was at 31.4%. This prevalence had differences from those seen in the study of Schirm, et al[3] (65.9%) as the community and time to collect the data were not identical. The study of Schirm, et al collected data of European lactating mothers' drug use during the six-month postpartum period. The European community had social characteristics and beliefs that were different from Asian communities and here in Thailand. The delay in the collection of data increased the opportunities in which mothers were able to use drugs during breastfeeding. However, we intended to collect data of lactating drug use during a one month period in this study as we hypothesized that the prevalence of lactating mothers' traditional drug use was especially high during early postpartum.

The types of drugs commonly used during breastfeeding are vitamins, analgesics, antibiotics, progestins and decongestants and this is as has been seen in a previous study[4,16]. But the predominant type of drug found in this study was the 'herbal health tonic for women' (79.7%) as home medications (*i.e.* acetaminophen and ferrous fumarate) and contraceptive drugs were not included in the standard definition of drugs used during breastfeeding. 'Herbal health tonic for women' contains alcohol which is used as a solvent

Table 3. Comparison of mothers'factors (age, income and BMI) between use of drugs and did not-use drugs groups

Mothers'factors	Used drug group (n = 69)	Not-used drug group (n = 151)	*p*-value
Age (years)	26.0±5.3	25.7±7.0	0.698
Income (baht)	14,623.2±6,894.4	15,841.0±8,740.0	0.312
BMI (kg/m^2)	23.3±5.3	22.2±4.4	0.110

Table 4. Comparison of mothers'factors (occupation, education, parity and route of delivery) between use of drugs and did not-use drugs groups

Mothers'factors	Used drug group (n = 69)	Not-used drug group (n = 151)	Prevalence rate ratio	95% CI	*p*-value
Occupation n (%)					
Self-employed or housewife	42 (29.2)	102 (70.8)	0.82	0.55-1.12	0.334
Employee	27 (35.5)	49 (64.5)			
Education n (%)					
<High school	64 (34.2)	123 (65.8)	2.26	0.98-5.19	0.029*
>Bachelor degree	5 (15.2)	28 (84.8)			
Parity n (%)					
Primipara	23 (29.9)	54 (70.1)	0.93	0.61-1.41	0.726
Multipara	46 (32.2)	97 (67.8)			
Route of delivery n (%)					
Vaginal delivery	43 (42.2)	59 (57.8)	1.91	1.27-2.88	0.001*
Cesarean section	26 (22.0)	92 (78.0)			

CI = confidence interval, *p<0.05 = statically significant difference

for the active herbal agent. The safety of the use of 'herbal health tonic for women' during breastfeeding has not been evaluated. However, Pradeepkumar et al[17] have reported on the incidence of fetal alcohol syndrome when mothers use the herbal health tonic during pregnancy. Alcohol reduces the oxytocin-mediated milk ejection reflex that follows infant suckling[18]. Lactating mothers who ingested a 0.3 gram/kg dose of alcohol produced an average of 9.3% less milk 2 hours after the alcohol intake, measured using a breast pump, than they did when a non-alcoholic beverage was consumed[19]. Therefore, lactating mothers using 'herbal health tonic for women' might decrease their milk volume. Mothers at high risk for delayed lactogenesis may have a problem with insufficient milk. Furthermore, the present study has determined that 2.9% of lactating mothers have used 'medicinal herbal alcohol' which contains a greater percentage of alcohol than that in 'herbal health tonic for women'. However, the outcomes of lactating mothers using 'herbal health tonic for women' and 'medicinal herbal alcohol' requires further investigation. As for the justification for using these drugs, mothers believe that they can help uterine contraction and change lochia rubra to lochia alba.

Pharmacies were the primary source of drugs that the mothers frequented and were able to purchase them without prescriptions. The following results regarded the fact that no advice about the drug's use during breastfeeding was offered (62.3%). Most mothers continued breastfeeding but the risk of the newborn's alcohol exposure remains unknown. This problem possibly effects breastfeeding and the newborn's health. We suggest that health professionals and pharmacists should be concerned with the risks of drug use during breastfeeding. They need to question women in their reproductive age as to "Are they breastfeeding?" and provide adequate, evidence-based information to make decisions about drug use during breastfeeding.

The associated factors for lactating mothers' drug use were their educational level and delivery by normal labor. Education lower than the high school level had shown 2.3 times greater use of drugs than those with a higher education. This result shows that knowledge regarding drug use may be associated

with the mothers' educational level. Mothers who delivered with vaginal delivery had 1.9 times more drug use than mothers delivering by cesarean section. We hypothesize that the mothers using "herbal health tonic for women' might be afraid of the drugs' adverse effects on the cesarean section wound. Cesarean section delivery seemed to be of a protective effect. However, further investigation is needed with future research.

The strength of this study is that the drug use data was collected from home visit interviews and the mothers had recorded breastfeeding and drug use daily according to the stated, clarified definitions. It has decreased the recall bias. However, the mothers' drug use knowledge and beliefs about traditional or folk drugs were not assessed. This is a limitation of this study.

Conclusion

At the first month postpartum, most mothers had used 'herbal health tonic for women' during breastfeeding. They purchased the drugs from pharmacies without proper advice about drug use during breastfeeding. It was likely to have negative effects on breastfeeding and the newborns' health. Therefore, adequate evidence-based information about drug use during lactation should be supported by health professionals and pharmacists and this should include social campaigns.

What is already known on this topic?

The data on the prevalence of a lactating mothers' drug use is minimal.

In Thailand, traditional or folk drug and medicinal herbal alcohol was still used in the belief that these drugs help uterine contractions, push lochia rubra and change it to lochia alba, is maintained.

What this study adds?

The prevalence of lactating mother's drug use was 31.4% in Thailand.

The most used drug during breastfeeding was herbal health tonic for women (79.7%) at the first month postpartum.

Most of the mothers bought drugs from pharmacies and were not advised about the drug's use during breastfeeding.

The associated factors of drug use were; an educational level of lower than a high school education (prevalence rate ratio 2.26 (95% CI 0.98 to 5.19) and delivery by vaginal delivery [prevalence rate ratio 1.91 (95% CI 1.27 to 2.88)].

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Potential conflicts of interest

None.

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การใช้ยาของมารดาระหว่างการให้นมบุตรในหนึ่งเดือนแรกหลังคลอดและปัจจัยที่เกี่ยวข้อง

เมสิตา สุขสมานวงศ์, อรสา เหมะจันทร, วิภาดา เหล่าสุขสถิตย์, นงเยาว์ ใบยา, ภาวิน พัวพรพงษ์

ภูมิหลัง: *การศึกษาเกี่ยวกับการใช้ยาของมารดาระหว่างการให้นมบุตรมีน้อย*

วัตถุประสงค์: *ศึกษาความชุกของการใช้ยาของมารดาในระหว่างการให้นมบุตรและปัจจัยที่เกี่ยวข้อง*

วัสดุและวิธีการ: *ศึกษาในสตรีหลังคลอดที่คลอดบุตรที่ศูนย์การแพทย์สมเด็จพระเทพรัตนราชสุดา ฯ สยามบรมราชกุมารี อำเภอองครักษ์ จังหวัดนครนายก ตั้งแต่เดือนกันยายน พ.ศ. 2559 ถึงมกราคม พ.ศ. 2560 มารดาจำนวน 220 รายได้รับการสัมภาษณ์เกี่ยวกับการใช้ยาในระหว่างให้นมบุตร ชนิดของยา แหล่งที่ได้รับยา และคำแนะนำเกี่ยวกับการใช้ยาในระหว่างการให้นมบุตร ข้อมูลการเลี้ยงลูกด้วยนมแม่ และข้อมูลพื้นฐานของมารดา ในระหว่าง การเยี่ยมบ้านที่หนึ่งเดือนหลังคลอด ความชุกของการใช้ยาของมารดาระหว่างการให้นมบุตร และปัจจัยที่เกี่ยวข้องจะได้รับการวิเคราะห์โดยใช้ร้อยละ t-test, Chi-square, prevalence rate ratio และค่าความเชื่อมั่นร้อยละ 95*

ผลการศึกษา: *การใช้ยาของมารดาในระหว่างการให้นมบุตรมีความชุกร้อยละ 31.4 มารดาส่วนใหญ่ใช้ยาสตรี เพื่อช่วยในการขับน้ำคาวปลามากที่สุด ร้อยละ 79.7 ในเดือนแรกหลังคลอด ซึ่งมารดาซื้อยาจากร้านขายยาได้ขาดการแนะนำเรื่องการใช้ยาในระหว่างการให้นมบุตร ปัจจัยที่เกี่ยวข้องกับการใช้ยาคือ การศึกษาของมารดาในระดับมัธยมศึกษาหรือต่ำกว่าโดยพบว่ามีความเสี่ยงในการใช้ยาเป็น 2.26 เท่า (ค่าความเชื่อมั่นร้อยละ 95 = 0.98 ถึง 5.19) ขณะที่การคลอดปกติพบว่ามีความเสี่ยงในการใช้ยาเป็น 1.91 เท่า (ค่าความเชื่อมั่นร้อยละ 95 = 1.27 ถึง 2.88)*

สรุป: *มารดาหลังคลอดมักใช้ยาสตรีเพื่อช่วยในการขับน้ำคาวปลา ซึ่งน่าจะมีผลเสียต่อการเลี้ยงลูกด้วยนมแม่และสุขภาพทารก ดังนั้นการให้ข้อมูลที่มีหลักฐานเชิงประจักษ์ที่เพียงพอในการเลือกใช้ยา ควรได้รับการสนับสนุนจากบุคลากรทางการแพทย์และเภสัชกรรวมทั้งการรณรงค์ในสังคม*